

392-3

FEB 17 1915

FISHER **RAWATER** SYSTEM

PURE, CLEAR, ICE

— FROM —

RAW WATER

By the FISHER ROCKING SYSTEM

The Fisher

The Fisher Machine Works Co.

— Builders of —

Ice and Refrigerating Machinery

LEAVENWORTH, KANSAS, U. S. A.

WRITE FOR CATALOG ON ICE MACHINERY

The
FISHER SYSTEM

of making Pure, Clear Ice from
“raw water” is patented in the
United States of America and ap-
plied for in Canada and other
Foreign Countries.

FISHER **RAW** WATER SYSTEM

THE RAW WATER ICE PLANT has finally come to stay and is a revelation to the small town and *ice manufacturer* who cannot afford to operate a small ice plant by steam power, but on the other hand is able to produce *pure, clear ice* from *Raw Water* and operate his machinery by an internal combustion engine or an electric motor.

Why Is Raw Water Ice Pure?

If you freeze water that is pure enough to drink, the resultant ice is not less pure, but is even purer as every one knows that all the impurities in suspension and also a large proportion of the impurities in solution are expelled from the crystals when water turns to ice and by the "*FISHER SYSTEM*" the theory is absolutely corrected, whereby the movement of the water in the can while the exposed portion is being frozen to the can, causes all of the impurities to become separated and washed off of the ice and toward the center of the cake and finally becomes what is known as the "core" which may or may not be removed and refilled with fresh water or melted ice water.

The report of the State Bacteriologist of Kansas shows that 99-4-10 per cent of even the minute germs in the water before freezing were absent from the melted ice. No distilled water ice makes a better showing than that for purity.

FISHER **RAWATER** *SYSTEM*

Why Is Raw Water Ice Clear?

The "*FISHER SYSTEM*" produces pure clear ice by keeping the water in movement by rocking the cans, while it is freezing and washing the impurities off of the ice and to the center of the can.

This System was thoroughly tried out before placing it on the market hence, there is no more experimenting.

Why the Fisher System Is So Desirable.

Because it can be applied to any existing standard can ice making plant without any great change, and it is designed especially for the small units where it is impossible to make distilled water ice at a profit.

The *FISHER SYSTEM* requires about one eight horse power per ton to operate it and no attention after installed and is so simple that any ordinary blacksmith could make or repair any part of it.

It requires very little power to operate, on account of the brine being heavier than the cans and water--therefore, they float in the brine.

A Revelation to the Small Town

Now, that the *FISHER SYSTEM* is a decided success, ice in a small town or a small quantity can be made clear and pure in less time and at less cost than even opaque or white ice can be made by the same plant. When the rocking system is applied and in operation it thoroughly agitates the brine in the tank, which not only causes it to freeze quicker, but eliminates the brine agitator or circulating pump.

FISHER **RAWATER** SYSTEM

Important Features

Claimed for the Fisher Rocking System

The best system for small Ice Plants.

Less Time required to freeze.

Pure, Clear Ice from "raw water."

Less Horse Power required per ton of ice.

Eliminating brine agitator and thoroughly agitates the brine by movement of the cans.

Purify the water before freezing, all of which is done by rocking the cans, another important feature is that we can apply this to any standard size can ice making plant and it will not require attention after installed.

If necessary to make an absolute germ proof cake of ice, fill the core space with melted ice as shown in bottle (Fig. 3) on page 6

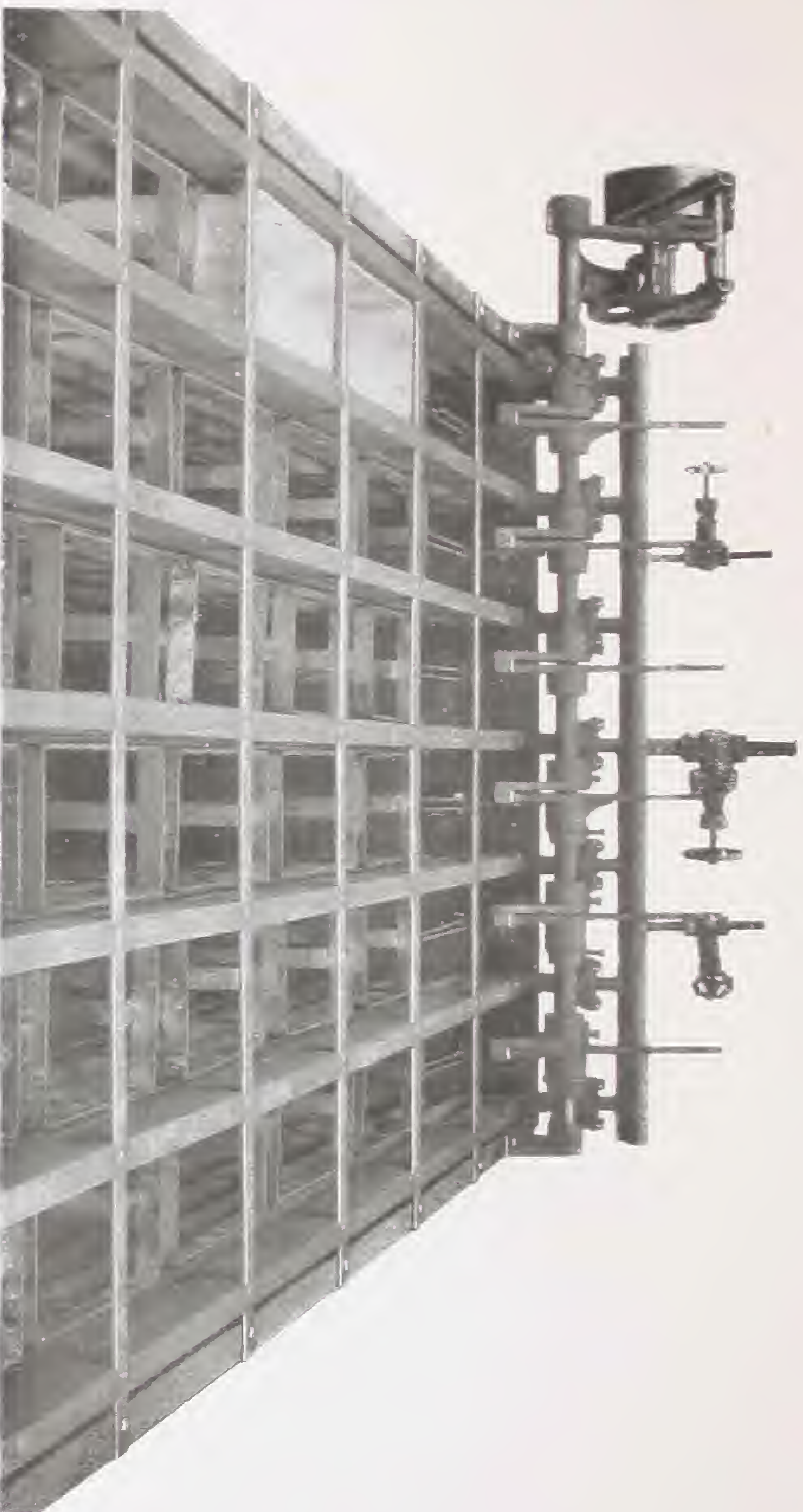


PLATE No. 1

Above is a cut of the *FISHER SYSTEM* applied to a five ton tank, showing a portion of can baskets, rocker arms and etc., as fastened to the coils and tank. The baskets are trunioned to the parallell bar supported by the regular standards as usually supporting the coils, a row of pins for the basket to rock on, are set in this parallell bar and welded in to place and the baskets are rocked to and frow, a distance of about one and one half inches and at a speed of about sixty five strokes per minute, which are driven from the end of the tank as shown in Plate 1 and 2.

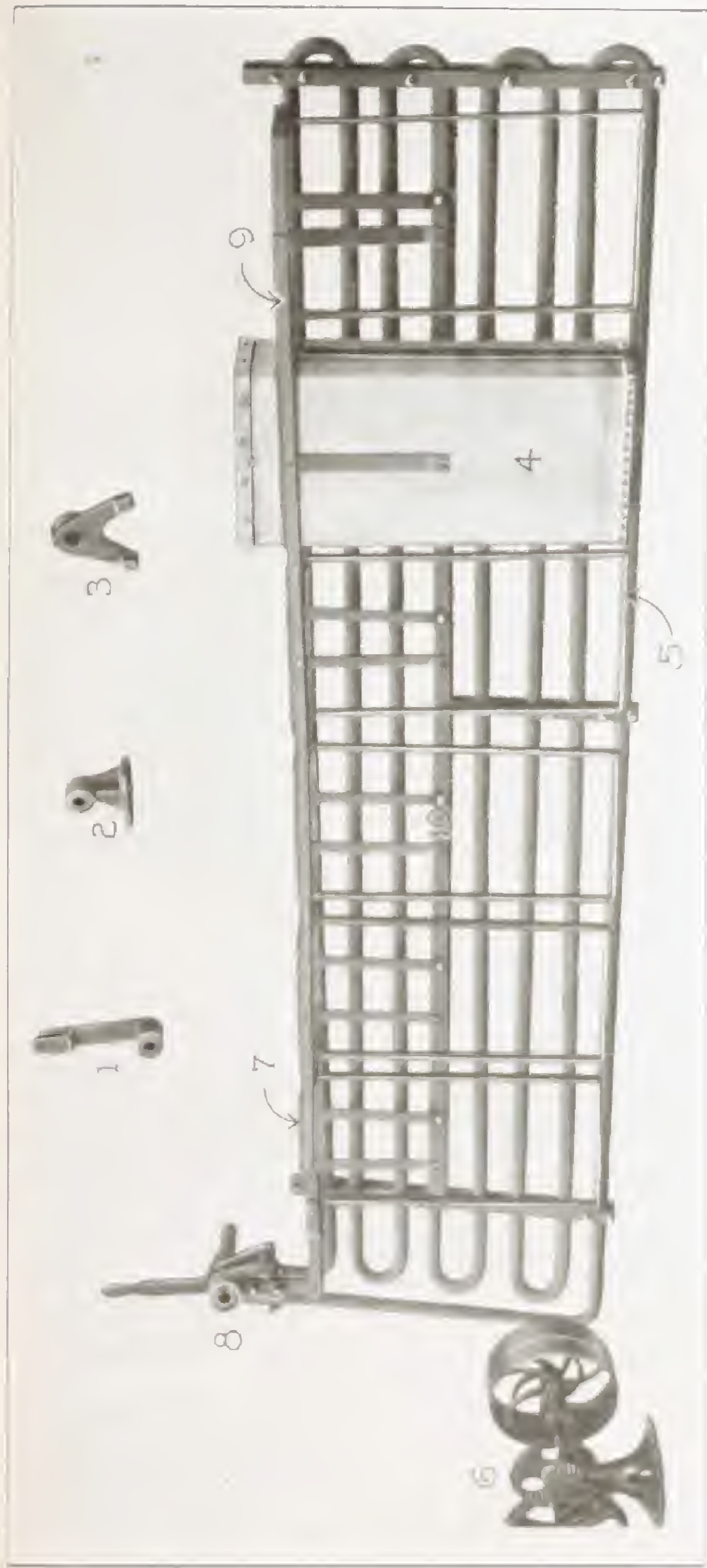


PLATE NO. 3

- ✓ No. 1 Driver for cooking the baked
- ✓ No. 2 Shell and and burning
- ✓ No. 3. The common the figure of No. 2,
- ✓ No. 4. Full
- ✓ No. 5. The common one with standards

- No. 6 Back for driving the apparatus.
- No. 7 Bucket or holder for tar.
- No. 8 Driving Crank, assembled.
- No. 9 Connecting Rods.
- No. 10 Parallel Bar, as position.

FISHER **RAWATER** *SYSTEM*



FIG 1

FIG 2

FIG 3

SAMPLES OF WATER BEFORE AND AFTER FREEZING.

FISHER RAWATER SYSTEM

ADVISORY BOARD

S. J. CRUMBINE, M. D.,
Dean of the College of Medicine,
Secretary of the State Board of Health
F. H. DILLINGS, Ph. D.,
Professor of Bacteriology.
E. B. S. BAILEY, Ph. D.,
Professor of Chemistry.
GRANDEVILLE R. JONES, C. E., S. B.
Professor of Sanitary Engineering.
C. A. BASKIN, B. S.,
Asst. Prof. of Sanitary Engineering.

STATE WATER SURVEY UNIVERSITY OF KANSAS

Address all official correspondence to
Director State Water Survey, Lawrence, Kansas.

LABORATORY STAFF

C. C. YOUNG, M. S.,
Director of the Water Survey.
F. W. BRUCKMILLER, A. B., Chemist.
M. GREENFIELD, M. A., Bacteriologist.
T. M. GODFREY, B. S., Asst. Chemist.
O. O. MALLEIS, M. S., Asst. Chemist.

LAWRENCE, KANSAS, Sept. 29, 1914.

Fisher Machine Works,
Leavenworth, Kansas.

Gentlemen:

On the reverse side of this page you will find analyses of the samples collected by F. W. Bruckmiller on Sept. 25, 1914. Analyses completed Sept. 29, 1914.

Lab. No. 7028-165. Taken from middle of 300 pound cake of ice. about three gallons of water.

Lab. No. 7029-100. Water.

Lab. No. 7030-Ice.

You will note from the analyses that the water left in the middle of the cake contained approximately ten times as much material in solution as the water from which the ice was made; also the bacterial count is approximately ten times as high.

There was practically nothing in solution in the melted ice. This shows conclusively that bacteria and the mineral matter are frozen out in your process. These are very interesting and instructive results.

Yours very truly,


Director.

CCY:REB
Inclosure.

FISHER RAWATER SYSTEM

REPORT OF WATER ANALYSIS—CITY OF.....Leavenworth, ..Ks.....

4-4557

Laboratory No	7028-165	7029-100	7030-1cc.	
Source				
Collected by.....		F. W. Bruckmiller		
Date of Collection		9-25-14		
Analysis Completed		9-29-14		
BACTERIAL EXAMINATION.				
Bacteria per cc. on				
Gelatine, at 20°—48 hrs				
Agar, at 37°—24 hrs.....	130	15	4	
Presumptive Tests for B. Coli.....	-	-	-	
No. of Positive Fermentations.				
in one 10 cc. tube.....				
in five 1 cc. tubes.....	5-	5-	5-	
in five 1 cc. tubes.....	5-	5-	5-	
in five .01 cc. tubes.....	2-			
Confirmatory Tests for B. Coli				
CHEMICAL ANALYSIS.				
Results in parts per million				
Temperature of Water.....				
Color.....	Brown		0	
Odor	0		0	
Turbidity	250	10	Clear	
Oxygen Consumed.....				
Nitrogen as Free Ammonia32	.026	.054	
Nitrogen as Alb. Ammonia.....	.60	.096	.076	
Nitrogen as Nitrites.....	0	0	0	
Nitrogen as Nitrates	4.	.4	0	
Solids, Total	2775.	275.	5.	
Solids, Dissolved				
Solids, Suspended				
Special				
MINERAL ANALYSIS.				
SiO ₂				
Fe ₂ O ₃ + Al ₂ O ₃				
Ca				
Mg.....				
Na + K				
Cl.....	152.	18.	2.	
SO ₄				
CO ₂				
HCO ₃	810.5	87.8	2.44	
CO ₂ (Combined)				
Special				

Gas in the fermentation tubes indicates the presence of organisms of the B. Coli group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds.



PHOTOGRAPHIC SIDE VIEW OF 300 LB. CAKE OF ICE.

Frozen By The Fisher Rocking System From Raw Water.



PHOTOGRAPHIC EDGE VIEW OF 300 L. B. CAKE OF ICE.
Frozen By The Fisher Rocking System. From Raw Water

FISHER RAWATER SYSTEM

Wetmore, Kansas.

October 27, 1914.

Fisher Machine Works Co.,

Leavenworth, Kansas.

Gentlemen.,

Your erecting engineer has completed the installation of your rocking system for making clear ice out of raw water on the little plant you installed for me a year ago and I am pleased to say that the same is giving me perfect satisfaction. The ice is nice and clear and we find that we can freeze it in less time than the old way and eliminate the use of the agitating pump.

I will be pleased to show this plant and raw water apparatus to any prospective purchasers you may send to me and give them all of the information pertaining to the same to the best of my knowledge.

Respectfully Yours,

E. Canood

FISHER RAWATER SYSTEM

Oxford, Kansas.

October 24, 1914.

Fisher Machine Works Company,

Leavenworth, Kansas.

Gentlemen.,

We are pleased to advise that your erecting engineer has installed our new ice plant, equiped with the Fisher Raw Water System and the same is satisfactory in every respect. We can make pure clear ice from raw well water and we highly recommend your raw water ice plants to any one wanting to install an ice plant.

Wishing you much success in this line, we beg to remain,

Yours very truly,

Oxford Ice & Cold Storage Co.
H. S. Conrad, Mgr.

Perry, Kansas.

May 21, 1914.

Fisher Machine Works Company,

Leavenworth, Kansas.

Gentlemen.,

I was somewhat skeptical as to installing your rocking system for making clear ice from raw water, in as much as I failed to get clear ice from raw water by the blower system. I sent you some of our water for analysis and a quantity to be frozen in your test plant at Leavenworth and after it was frozen it sufficiently convinced me to order your rocking system applied to my plant. Your erecting engineer states that we are turning out beautiful ice with it and I am more than pleased with the apparatus. We find that we can freeze ice in less time by this system and as it not only agitates the water in cans, but thoroughly and practically agitates the brine in the tank, thereby eliminating the circulating pump or agitator entirely.

These are true conditions that exist in this installation and I trust that prospective customers may find it convenient to visit my plant and see this apparatus in operation, which will prove to them what it is doing.

Wishing you much success, I beg to remain,

Yours very truly,

E. F. Bridson



1113111

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas

GEORGE H. FISHER,

of

Leavenworth,

Kansas,

HAS PRESENTED TO THE **Commissioner of Patents** A PETITION PRAYING FOR THE GRANT OF LETTERS PATENT FOR AN ALLEGED NEW AND USEFUL IMPROVEMENT IN

APPARATUS FOR PRODUCING CRYSTAL ICE FROM RAW WATER,

A DESCRIPTION OF WHICH INVENTION IS CONTAINED IN THE SPECIFICATION OF WHICH A COPY IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND HAS COMPLIED WITH THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED, AND

Whereas

UPON DUE EXAMINATION MADE THE SAID CLAIMANT IS ADJUDGED TO BE JUSTLY ENTITLED TO A PATENT UNDER THE LAW.

NOW THEREFORE THESE **Letters Patent** ARE TO GRANT INTO THE SAID

George H. Fisher, his

HEIRS OR ASSIGNS

FOR THE TERM OF SEVENTEEN YEARS FROM THE sixth DAY OF

October,

ONE THOUSAND NINE HUNDRED AND

fourteen,

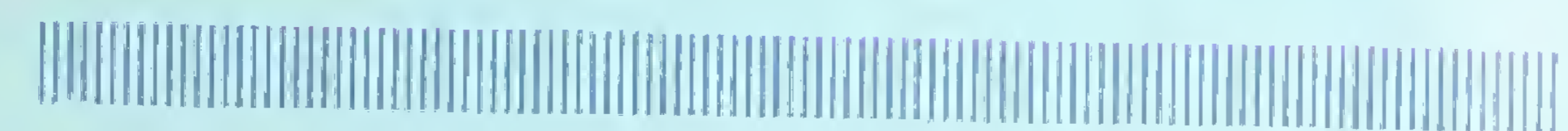
THE EXCLUSIVE RIGHT TO MAKE, USE AND VEND THE SAID INVENTION THROUGHOUT THE UNITED STATES AND THE TERRITORIES THEREOF.

In testimony whereof, I have hereunto set my hand, and caused the seal of the Patent Office to be affixed at the City of Washington, this sixth day of October, in the year of our Lord one thousand nine hundred and fourteen, and of the Independence of the United States of America one hundred and thirty-ninth.

R. F. Whitehead

Acting Commissioner of Patents

FISHER **RAWATER** *SYSTEM*



AFTER this brief description of one of the latest and most successful raw water apparatus on the market today, we are pleased to be able to refer prospective purchasers to satisfied users of the FISHER PLANTS and in as much as we maintain and operate a complete test plant to freeze sample waters here at our works, we will be pleased to have anyone call and inspect the same and be fully convinced.

Respectfully,
FISHER MACHINE WORKS CO.



“FISHER”

Raw Water

I C E

